

MERRYMEETING LAKE DAM in NEW DURHAM

DAM# 170.01 HAZCLASS H

OPERATIONS, MAINTENANCE, AND RESPONSE (OMR) FORM

BASIC DATA

Pond area (ac)	1233 (Arcview)
Max height (ft)	22
Length (ft)	285
Perm stor (ac-ft)	19,500
Max stor (ac-ft)	21,960
Drainage area (sq mi)	10.53
River	Merrymeeting River

ELEVATIONS

0 on gage translates to	
Gage at full lake	648.5
Gage at top of dam	650.51 – right abut (former spillway)
Gage at top of dam	650.8 – left abut
Gage perm spill crest	644.8
Flowage or fee ownership	
Natural Mean High Water	

HYDROLOGY – (precip.net rainfall)

Meets Req. Disch. Capacity	N
Year Completed	2015
Disch. Cap. – w/o ops, 1' fbd	92 cfs
Disch. Cap. – w/o ops, top dam	232 cfs
Disch. Cap. – open gate, 1' fbd	279 cfs
Disch. Cap. – open gate, top dam	422 cfs
Disch. Cap. – full ops (stoplogs removed), 1' fbd	742 cfs
Disch. Cap. – full ops(stoplogs removed), top dam	977 cfs
50 yr Storm – Freeboard	1.65 ft
100 yr Storm - Rainfall	7.78"
100 yr Storm - routed	55 cfs
100 yr Storm – Freeboard	1.35 ft
2.5x100 yr Storm - Rainfall	2.5x (7.78")*
2.5x100 yr Storm - routed	232 cfs*
Design Storm – Freeboard (Assume right el.605.8 w/no ops)	0.0 ft (over)*
24-hr Rainfall to overtop dam	7.78 inches
Rise per inch runoff (ft/in)	0.39
Time to peak (hrs)	

* Denotes Design Storm

*Note: design storm passes with 1 foot freeboard if water is lowered to el.647.5

*Note: analysis assumes rt side raised 0.29 ft

SPILLWAY

Spillway width (ft)	20
Freeboard (ft)	
Flashboard height (in)	None
Spacing of pins	n/a
Number of pins	n/a
Size & type of pins	n/a
Auto failure head	n/a

GATES (#1 in center)

Number of gates	1
Size of gates	40" Dia.
Gate sill elev	628.4 (gage)
Gate capacity each (cfs)	190 cfs at top of dam 180 cfs at normal pool

STOPLOGS (#1 on left)

Number of stoplog bays	4
# Stoplogs in each bay	5
Size of each stoplog	5'w x 7.5"h
Elev of stoplog sill	644.8 (gage)

BENCHMARKS – NGVD

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CONTACTS prior to operations

Operated by NHFG – J. Smith 859-1814

COORDINATES: N43.2837 W71.1043

OWNERSHIP: Reviewed 2013

State owns the entire dam and within 15 feet of the footprint.



Revision date: 02/24/2015
Data subject to review & update

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NOTES

Merrymeeting Lake Dam is operated by Jason Smith of the Powder Mill Fish Hatchery in New Durham. Hatchery phone: 603-859-2041. (Harry Tudor, foreman)
Owned by NH Fish & Game, this is a Great Pond

OPERATIONS

Summer Operation: The water level at Merrymeeting Lake is maintained at approximately 648.5 gage elevation. There are no operations for the summer season.

Seasonal fall drawdown: Merrymeeting Lake is lowered 2 feet on September 24th.

Spring Operation: The remaining pool is lowered an additional foot during the winter snowmelt.

STORM OPERATIONS & CONTACTS

During a high water event, if the dams' performance becomes concerning, or if the water level is approaching the top of the dam, the Dam Bureau should arrange for increased monitoring and reporting of the condition of the dam until water levels have receded.

<u>EMERGENCY Contacts:</u>	Jim Gallagher, Chief	Dan Mattaini, Administrator of Operations
	Dir: 271-1961	Dir: 271-8867
	Cell: 419-9206	Cell: 419-0293

<u>LOCAL RESPONDERS:</u>	New Durham Fire	New Durham Police	New Durham Highway
	859-3473	859-2751 (Dispatch)	859-8000

EM Director - Ken Quigley Emdnd1@gmail.com

MAINTENANCE - SITE VISIT CHECK LIST – AT LEAST MONTHLY

- Check water level, inspect and clean outlet works as necessary
- Check gate and stoplogs for any significant leakage
- Monitor the toe drain outlets to the left and right of the spillway chute at the downstream toe
- Monitor seepage at the toe of the left side of the spillway chute
- Remove trees & brush as needed within 15 feet of the dam footprint, mow vegetative cover as needed
- Monitor vertical concrete cracks on upstream core wall face, general
- Monitor concrete condition, repair concrete as necessary
- Replace any damaged stoplogs

HAZARD CLASSIFICATION & DOWNSTREAM REVIEW (100 YR PLUS BREACH)

High Hazard – A failure of this dam would likely destroy the immediately downstream occupied Fish Hatchery buildings, resulting in the probable loss of life. Breach flows would also result in impassable downstream town and state owned roadways and the failure of the high hazard Jones Dam.

A review of the existing inundation mapping finds approximately 160 residences and 10 commercial structures impacted by a dam breach. This results in approximately 650 people in the path of a potential dam breach.

Downstream Feature	Dist d/s	Observation
Town Road	265 ft	Merrymeeting Road; 2- Culverts, 4'diameter. CMP, 6'w x 5.2'h box
Building	500 ft	Powder Mill Fish Hatchery Buildings; Anticipate 10' of flooding with possible destruction of buildings
Town Road	1.48 Miles	Merrymeeting Road; Box culvert, 12.5' w x 9'h, invert = 11'. Anticipate road would be overtopped.
Private Drive	2.4 Miles	Private Drive, #89 Merrymeeting Road 2-16'w x 8.5'h bridge openings, inv = 9.5'
Dam	2.6 Miles	Jones Dam #170.02. High hazard. Dam would likely fail with 14 feet above 100 year levels.
Town Road	3.4 Miles	Main Street, Review crossing at next inspection.
Dam	3.5 Miles	Downing Pond Dam #170.03, Low hazard. Dam would be overtopped.
State Road	3.7 Miles	NH Route 11; Anticipate overtopping of 5 ft.
State Road	6.9 Miles	NH Route 28; Anticipate overtopping of 9 ft.
State Road	7.6 Miles	NH Route 140; Anticipate overtopping of 6 ft.
Dam	7.9 Miles	Alton Power Dam #006.02; High hazard. Anticipate dam failure.
Residences	9.1 Miles	Located between Alton Power Dam and Lake Winnepesaukee. Anticipate 8' of flooding
Residences	Along length of inundation area	Multiple homes along length of inundation from Merrymeeting Dam to Lake Winnepesaukee.

Record of Changes

Field	Date	Change
Gate sill elev	11/23/04 EJK	From 547.10 USGS
Elevations	3/17/08 (KRF)	Removed line for gage reading at full lake
Spillway	3/17/08 (KRF)	Spillway width/freeboard
Gates	3/17/08 (KRF)	Size of gates (from 4'h to 3.4'h), note that gates open to 4'
Notes	3/17/08 (KRF)	Note that gates open to 4', explanation of change to spillway
Storm operations	3/17/08 (KRF)	Note to make changes downstream dams after operation at this dam
Coordinates	02/29/2012 (gdw)	Added for GPS users
Directions	3/29/12 (GDW)	Names of street and added both side access
Revise Sheet	02/24/2015 BAD	Revised hydrology, format for OMR form